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NOTICE OF ALLOWANCE AND FEE(S) DUE

41505	7590	07/23/2009

WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER
THOMAS, MIA M

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 07/23/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,374	04/13/2004	Channing Pierce Verbeck	MSFT-3485/307558.01	4864

TITLE OF INVENTION: IMPLEMENTATION OF DISCRETE COSINE TRANSFORMATION AND ITS INVERSE ON PROGRAMMABLE GRAPHICS PROCESSOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	10/23/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: <u>Mail</u> Mail Stop ISSUE FEE
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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

41505   7590   07/23/2009

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,374	04/13/2004	Channing Pierce Verbeck	MSFT-3485/307558.01	4864

TITLE OF INVENTION: IMPLEMENTATION OF DISCRETE COSINE TRANSFORMATION AND ITS INVERSE ON PROGRAMMABLE GRAPHICS PROCESSOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	10/23/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
THOMAS, MIA M	2624	382-250000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,374	04/13/2004	Channing Pierce Verbeck	MSFT-3485/307558.01	4864

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 556 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 556 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

	Application No.	Applicant(s)
Notice of Allowability	10/823,374	VERBECK ET AL.
	Examiner	Art Unit	
	Mia M. Thomas	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to <u>applicant's remarks received on 18 June 2009</u>.

2. ☒ The allowed claim(s) is/are <u>1-5,7-15,17-20 and 22</u>.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

      a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

          1. ☐ Certified copies of the priority documents have been received.

          2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

          3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

             International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

        Authorization for this examiner's amendment was given in a telephone interview with Mr.

Steven Samuels (Registration # 37,711) on 17 July 2009.

        The application has been amended as follows:

In the Claims:

At Claim 1, line 3 bridging line 4; after the second occurrence of the term "shader" and

before "associating"; insert--"module"--

At Claim 1, line 6; after "associated" and before "groups"; insert --"pre-determined"--

At Claim 1, line 11; after "the" and before "sets"; insert --"corresponding"--

At Claim 1, line 15-17; delete the phrase "wherein said multiplying a column or row o of

pixels with a predetermined matrix to generate a corresponding set of output pixels,

determining, and sampling the pixels are performed by said ~~at least one~~ active shader

module."; replace with --" wherein said multiplying, said determining, and said sampling

of the pixels is performed by said active shader module."

At Claim 2, line 2; delete the phrase "wherein the multiplying a column or row of pixels

with a predetermined matrix to generate a corresponding set of output pixels,

determining, and sampling the pixels are performed in the GPU."; replace with

--" wherein the said multiplying, said determining, and said sampling of the pixels is performed in the GPU.--"

Replace Claim 4 as follows:

--"'The method of Claim 1, wherein said sampling at least a portion of the pixels comprised within the scanlines comprises using a separate shade for each set of scanlines."--

At claim 5, line 2; after "shader" and before "accesses"; insert--"module"--

At Claim 7, line 4; after "block" and before "within"; insert --"of pixels"--

At claim 7, line 9; after "polyline" and before "and"; insert --"of pixels for each column or row in each block of pixels"--

At claim 7, line 9; after "and" and before "creating"; insert --"said"--

At claim 7, line 9; after "line" and before "are"; insert "for each row or column in each block of pixels,"--

At Claim 7, line 9, delete "are"; replace with --"is"--

Replace Claim 10 as follows:

--"The method of Claim 7, wherein the step of creating a polyline of pixels for each column or row in each block of pixels and creating a line for each row or column in ach block of pixels is performed in a GPU."--

At Claim 11, line 4; after "block" and before "within"; insert --"of pixels"--

At Claim 11, line 12; after "the" and before "resultant"; insert --"generated"--

At Claim 11, line 12; delete the phrase "to generate a resulting value"; replace with --"to generate a second resulting value,"--

At Claim 11, line 13; after "and" and before "adding"; insert --"said"--

At Claim 11, line 13; delete "are"; replace with --"is"--

At Claim 12, line 2; after "the" and before "resultant"; insert --"generated"--

At Claim 12, line 2; after "each" and before "resulting"; insert --"of said second"--

At Claim 12, line 2, delete the second occurrence of the term "value"; replace with -- "values"--

At Claim 13, line 4; after "block" and before "within"; insert --"of pixels"--

At Claim 13, line 6; after "shader" and before "and"; insert --"module"--

At Claim 13, line 7; after "shader" and before "and"; insert --"module"--

At Claim 13, line 8; delete the phrase "wherein the setting up and the rendering are performed by said at least one active shader module."; replace with --"wherein setting up the shader module and rendering the scanline and the column are performed by said active shader module."--

At Claim 14, line 1; delete "shaders"; replace with --"shader module"--

At Claim 15, line 12, bridging line 13; delete the phrase "wherein said setting up and the rendering are performed by said at least one active shader module"; replace with --" wherein said multiplying, said determining, and said sampling of the pixels is performed by said active shader module."

At claim 19, line 2; after "shader" and before "for"; insert--"module"--

At claim 20, line 2; after "shader" and before "accesses"; insert--"module"--

At Claim 22, line 4 bridging line 5; after the second occurrence of the term "shader" and before "associating"; insert--"module"--

At Claim 22, line 11; delete the phrase "determining and sampling the pixels are performed in the GPU"

At Claim 22, line 16; after "shader" and before "for"; insert --"module"--

At Claim 22, line 18, bridging line 19 ; after "shader" and before "accesses"; insert --"module"--

At Claim 22, line 20-22; delete the phrase "wherein said multiplying a column or row o of pixels with a predetermined matrix to generate a corresponding set of output pixels, determining, and sampling the pixels are performed by said ~~at least one~~ active shader module."; replace with --" wherein said multiplying, said determining, and said sampling of the pixels is performed by said active shader module."

2.   This Notice of Allowability/Examiner's Amendment is responsive to applicant's remarks received on 18 June 2009. Claims 1-5, 7-15, 17-20 and 22 are pending. Claims 6, 16 and 21 have been canceled. Claims 1, 7, 11, 13, 15 and 22 have been amended with support for the amendments found in paragraph [0036, and 0037] of the filed specification. No new matter has been added. Claims 1-5, 7-15, 17-20 and 22 are allowable. Claims have been renumbered as 1-19.

3.   Response to Arguments: In response to applicant's remarks at page 7-10, with regards to the rejections under 35 U.S.C. 103(a), the arguments are persuasive and the rejections of the claims have been withdrawn.

4.   Regarding 35 U.S.C. 101: Independent Claim 1 recites "a method of implementing a DCT (Discrete Cosine Transform) in a GPU (Graphics Processing Unit) comprising separating

an image into blocks and processing each of the associated predetermined groups of pixels in each block of pixels, in parallel…".

This claimed limitation is performed by a computer or imaging device in that only a computer, or similar apparatus can execute the computational complexity of "separating an image into blocks and processing each of the associated predetermined groups of pixels in each block of pixels, in parallel…".to realize the intended purpose of the invention.

A reasonable interpretation of the specification indicated that this claimed limitation in addition to a few other recited steps, require a programmed computer/apparatus to accomplish the intended purpose of the invention, and there is no disclosed indication of manual and/or mental activity involved. Therefore independent claim 1 is tied to a machine and thus a statutory process. Similar claim analysis applies for independent Claims 1, 7, 11, 13 and 22.
Claims 1, 7, 11, 13 and 22 are similarly tied to a machine and are thus statutory processes.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is (571)270-1583. The examiner can normally be reached on Monday-Thursday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/   /Mia M Thomas/
Supervisory Patent Examiner, Art Unit 2624   Examiner, Art Unit 2624